No. 9600059

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Pioneer Hi-Bred International, Inc.

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED NOVEL VARIETY OF SEXUALLY REPRODUCED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF EIGHTEEN YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'9305'

In Testimony Whereof, *I have hereunto set my hand and caused the seal of the* Plant Variety Protection Office *to be affixed at the City of Washington, D.C. this thirty-first day of March in the year of our Lord one thousand nine hundred and ninety-eight.*

Attest:

Acting Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions.* FORM APPROVED - OMB NO. 0581-0055

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE DIVISION - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a).

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1. NAME OF APPLICANT(S) *(as it is to appear on the Certificate)*
Pioneer Hi-Bred International, Inc.

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER

3. VARIETY NAME
9305

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
700 Capital Square
400 Locust St.
Des Moines, IA 50309

5. TELEPHONE *(include area code)*
515/270-3582

6. FAX *(include area code)*
515/253-2288

FOR OFFICIAL USE ONLY

PVPO NUMBER 9600059

FILING DATE: NOV 22 1995

FEE RECEIVED
FILING AND EXAMINATION FEE: $ 2450.00
DATE: NOV 22 1995
CERTIFICATION FEE: $ 300.00
DATE: 5/20/1996

7. GENUS AND SPECIES NAME
Glycine Max

8. FAMILY NAME *(Botanical)*
Leguminosae

9. CROP KIND NAME *(Common name)*
Soybean

10. IF THE APPLICANT NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.) (Common name)*
Corporation

11. IF INCORPORATED, GIVE STATE OF INCORPORATION
Iowa

12. DATE OF INCORPORATION
1926

13. NAME AND ADDRESS OF APPLICANT REPRESENTATIVE(S), IF ANY, TO SERVE IN THIS APPLICATION AND RECEIVE ALL PAPERS
John Grace
7300 NW 62nd Ave.
PO Box 1004
Johnston, IA 50131-1004

Mike Roth (copy)
700 Capital Square
400 Locust St.
Des Moines, IA 50309

14. TELEPHONE *(include area code)*
515/270-3582

15. FAX *(include area code)*
515/253-2288

16. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED *(Follow instructions on reverse)*

- a. ☒ Exhibit A. Origin and Breeding History of the Variety
- b. ☒ Exhibit B. Statement of Distinctness
- c. ☒ Exhibit C. Objective Description of the Variety
- d. ☒ Exhibit D. Additional Description of the Variety
- e. ☒ Exhibit E. Statement of the Basis of the Applicant's Ownership
- f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties verification that tissue culture will be deposited and maintained in a public repository)*
- g. ☒ Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to PVPO)*

17. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE SOLD BY VARIETY NAME ONLY, AS A CLASS OF CERTIFIED SEED? *(See Section 83(a) of the Plant Variety Protection Act)*
☐ YES *(If "yes," answer items 18 and 19 below)* ☒ NO *(If "no," go to item 20)*

18. DOES THE APPLICANT SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☐ YES ☐ NO

19. IF "YES" TO ITEM 18, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☐ FOUNDATION ☐ REGISTERED ☐ CERTIFIED

20. HAS THE VARIETY OR A HYBRID PRODUCED FROM THE VARIETY BEEN RELEASED, USED, OFFERED FOR SALE, OR MARKETED IN THE U.S. OR OTHER COUNTRIES?
☒ YES *(If "yes," give names of countries and dates)* ☐ NO
USA-1995, Canada-1995

21. The applicant(s) declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned applicant(s) is(are) the owner(s) of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 41, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Applicant(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF APPLICANT *(Owner(s))*		SIGNATURE OF APPLICANT *(Owner(s))*	
NAME *(Please print or type)* D. John Grace III		NAME *(Please print or type)*	
CAPACITY OR TITLE Soybean Research Coordinator	DATE 11/16/95	CAPACITY OR TITLE	DATE

Exhibit A: Origin and Breeding History

Breeding History of 9305 Soybean

Pioneer soybean variety 9305 was developed using the backcross breeding technique to incorporate the Rps1k gene for multi race resistance to Phytophthora megasperma f. sp. glycinea. It is a BC6F2 derived variety.

1988 The cross 9303/30094 was made in the spring greenhouse cycle at the Pioneer Hi-Bred Int'l, Inc. soybean research station at St. Joseph, IL. The stock number 30124 was assigned to this cross. Cross 30094 = (A3733/RESNIK)/A3733.

The F1 generation was grown in the field at Napoleon, OH and the first backcross, 9303/30124, was made. The stock number 30199 was assigned to this cross.

The plants were grown in the fall greenhouse cycle at the St. Joseph, IL greenhouse. All plants were screened for the Rps1k gene using the hypocotyl inoculation technique. The PRR resistant plants were then crossed with variety 9303 for the second backcross. The cross was assigned the stock number 30294.

1989 Plants of the cross 30294 were grown in the spring cycle at the St. Joseph, IL greenhouse. The plants were screened for the Rps1K gene using the hypocotyl inoculation technique. The resistant plants were crossed with 9303 for the third backcross and the stock number 30310 was assigned.

Plants of the stock number 30310 were screened at Napoleon, OH for the Rps1K gene using the hypocotyl inoculation technique. Resistant plants were crossed with 9303 for the fourth backcross and the stock number 30388 was assigned to the cross.

Plants of stock number 30388 were grown in the fall greenhouse cycle at St. Joseph, IL. Plants were screened for the Rps1K gene using the hypocotyl inoculation technique. Resistant plants were crossed with 9303 for the fifth backcross and the stock number 30444 was assigned.

1990 Plants of stock number 30444 were grown in the spring greenhouse cycle at St. Joseph, IL and were screened for the Rps1K gene using the hypocotyl inoculation technique. Resistant plants were crossed with 9303 for the sixth backcross and the stock number 30458 was assigned.

Plants of the stock number 30458 were grown and screened for the Rps1K gene in the lab at the Pioneer Hi-Bred Int'l, Inc. soybean research station in Napoleon, OH. Resistant plants were transplanted to the field. Seed from each plant was harvested and sent to the winter nursery in Chile.

In Chile, individual F2 plants were harvested and threshed and the F3 seed sent back to Napoleon, OH.

1991 F3 plant rows were grown at Napoleon, OH. Seed from each row was screened in the lab for the Rps1K gene. The row which became 9305 was selected as being homozygous for the Rps1K gene and was assigned the number W30458-001. It was harvested in bulk and sent to the Puerto Rico winter nursery for increase.

1992 Stock number W30458-001 was assigned the experimental number Y30458-001 and tested in wide area tests. A .33 acre increase was grown at Napoleon. Five hundred pounds of seed were sent to Chile for winter nursery increase.

1993 Y30458-001 was tested in wide area tests. A 5.0 acre breeders seed increase was grown at Napoleon from the Chile increase seed source. 266 acres of parent seed from the Chile increase was grown at Waterloo, IA. Progeny rows were grown at Napoleon for purification.

1994 Y30458-001 was tested in wide area tests and based upon yield performance and Phytophthora resistance was assigned the commercial number 9305. A 4.0 acre breeder seed increase from the 1993 progeny rows was grown at Napoleon.

9305 has undergone three years of extensive testing and purification, and has been observed to be uniform and stable for all plant traits from generation to generation.

Exhibit B: Novelty Statement

Variety 9305 is most similar to Variety 9303. However, 9305 is resistant to races 1-5 of Phytophthora megasperma var. sojae while 9303 is susceptible to these races.

FORM APPROVED: OMB NO. 0581-005

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
~~LIVESTOCK, MEAT, GRAIN~~ & SEED DIVISION
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MARYLAND 20705

EXHIBIT
(Soybean

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (Glycine max L.)

NAME OF APPLICANT(S)	TEMPORARY DESIGNATION	VARIETY NAME
Pioneer Hi-Bred International, Inc.		9305

ADDRESS *(Street and No., or R.F.D. No., City, State, and Zip Code)*	FOR OFFICIAL USE ONLY PVPO NUMBER
700 Capital Square 400 Locust Street Des Moines, IA 50309	9600059

Choose the appropriate response which characterizes the variety in the features described below. When the number of significant digits in your answer is fewer than the number of boxes provided, place a zero in the first box when number is 9 or less (e.g., [0][9]). Starred characters ★ are considered fundamental to an adequate soybean variety description. Other characters should be described when information is available.

1. SEED SHAPE:

[2]

1 = Spherical (L/W, L/T, and T/W ratios = < 1.2)
2 = Spherical Flattened (L/W ratio > 1.2; L/T ratio = < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W = < 1.2)
4 = Elongate Flattened (L/T ratio > 1.2; T/W > 1.2)

★ **2. SEED COAT COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green 3 = Brown 4 = Black 5 = Other *(Specify)* _____

3. SEED COAT LUSTER: (Mature Hand Shelled Seed)

[1] 1 = Dull ('Corsoy 79'; 'Braxton') 2 = Shiny ('Nebsoy'; 'Gasoy 17')

★ **4. SEED SIZE: (Mature Seed)**

[1][8] Grams per 100 seeds

★ **5. HILUM COLOR: (Mature Seed)**

[2] 1 = Buff 2 = Yellow 3 = Brown 4 = Gray 5 = Imperfect Black 6 = Black 7 = Other *(Specify)* _____

★ **6. COTYLEDON COLOR: (Mature Seed)**

[1] 1 = Yellow 2 = Green

★ **7. SEED PROTEIN PEROXIDASE ACTIVITY:**

[1] 1 = Low 2 = High

★ **8. SEED PROTEIN ELECTROPHORETIC BAND:**

[ ] 1 = Type A ($SP1^a$) 2 = Type B ($SP1^b$)

★ **9. HYPOCOTYL COLOR:**

[3] 1 = Green only ('Evans'; 'Davis') 2 = Green with bronze band below cotyledons ('Woodworth'; 'Tracy')
3 = Light Purple below cotyledons ('Beeson'; 'Pickett 71')
4 = Dark Purple extending to unifoliate leaves ('Hodgson'; 'Coker Hampton 266A')

★ **10. LEAFLET SHAPE:**

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other *(Specify)* _____

11. LEAFLET SIZE:

[2] 1 = Small ('Amsoy 71'; 'A5312') 2 = Medium ('Corsoy 79'; 'Gasoy 17') 3 = Large ('Crawford'; 'Tracy')

12. LEAF COLOR:

[2] 1 = Light Green ('Weber'; 'York') 2 = Medium Green ('Corsoy 79'; 'Braxton') 3 = Dark Green ('Gnome'; 'Tracy')

★ **13. FLOWER COLOR:**

[2] 1 = White 2 = Purple 3 = White with purple throat

★ **14. POD COLOR:**

[2] 1 = Tan 2 = Brown 3 = Black

★ **15. PLANT PUBESCENCE COLOR:**

[1] 1 = Gray 2 = Brown (Tawny)

16. PLANT TYPES:

[2] 1 = Slender ('Essex'; 'Amsoy 71') 2 = Intermediate ('Amcor'; 'Braxton') 3 = Bushy ('Gnome'; 'Govan')

★ **17. PLANT HABIT:**

[3] 1 = Determinate ('Gnome'; 'Braxton') 2 = Semi-Determinate ('Will') 3 = Indeterminate ('Nebsoy'; 'Improved Pelican')

★ **18. MATURITY GROUP:**

[0][6] 1 = 000 2 = 00 3 = 0 4 = I 5 = II 6 = III 7 = IV 8 = V 9 = VI 10 = VII 11 = VIII 12 = IX 13 = X

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

BACTERIAL DISEASES:

★ [0] Bacterial Pustule *(Xanthomonas phaseoli* var. *sojensis)*

★ [1] Bacterial Blight *(Pseudomonas glycinea)*

★ [0] Wildfire *(Pseudomonas tabaci)*

FUNGAL DISEASES:

★ [1] Brown Spot *(Septoria glycines)*

Frogeye Leaf Spot *(Cercospora sojina)*

★ [0] Race 1 [0] Race 2 [0] Race 3 [0] Race 4 [0] Race 5 [0] Other *(Specify)* _____

[0] Target Spot *(Corynespora cassiicola)*

[0] Downy Mildew *(Peronospora trifoliorum* var. *manshurica)*

[0] Powdery Mildew *(Microsphaera diffusa)*

★ [1] Brown Stem Rot *(Cephalosporium gregatum)*

[0] Stem Canker *(Diaporthe phaseolorum* var. *caulivora)*

19. DISEASE REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant) (Continued)

FUNGAL DISEASES: (Continued)

★ [1] Pod and Stem Blight *(Diaporthe phaseolorum* var; *sojae)*

[0] Purple Seed Stain *(Cercospora kikuchii)*

[1] Rhizoctonia Root Rot *(Rhizoctonia solani)*

Phytophthora Rot *(Phytophthora megasperma* var. *sojae)*

★ [2] Race 1 [2] Race 2 [2] Race 3 [2] Race 4 [2] Race 5 [0] Race 6 [2] Race 7

[2] Race 8 [2] Race 9 [ ] Other *(Specify)* _____

VIRAL DISEASES:

[1] Bud Blight (Tobacco Ringspot Virus)

[1] Yellow Mosaic (Bean Yellow Mosaic Virus)

★ [1] Cowpea Mosaic (Cowpea Chlorotic Virus)

[1] Pod Mottle (Bean Pod Mottle Virus)

★ [1] Seed Mottle (Soybean Mosaic Virus)

NEMATODE DISEASES:

Soybean Cyst Nematode *(Heterodera glycines)*

★ [ ] Race 1 [ ] Race 2 [1] Race 3 [ ] Race 4 [ ] Other *(Specify)* _____

[0] Lance Nematode *(Hoplolaimus Colombus)*

★ [0] Southern Root Knot Nematode *(Meloidogyne incognita)*

★ [0] Northern Root Knot Nematode *(Meloidogyne Hapla)*

[0] Peanut Root Knot Nematode *(Meloidogyne arenaria)*

[0] Reniform Nematode *(Rotylenchulus reniformis)*

[ ] OTHER DISEASE NOT ON FORM *(Specify):* _____

20. PHYSIOLOGICAL RESPONSES: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

★ [1] Iron Chlorosis on Calcareous Soil

[ ] Other *(Specify)* _____

21. INSECT REACTION: (Enter 0 = Not Tested; 1 = Susceptible; 2 = Resistant)

[0] Mexican Bean Beetle *(Epilachna varivestis)*

[0] Potato Leaf Hopper *(Empoasca fabae)*

[ ] Other *(Specify)* _____

22. INDICATE WHICH VARIETY MOST CLOSELY RESEMBLES THAT SUBMITTED.

CHARACTER	NAME OF VARIETY	CHARACTER	NAME OF VARIETY
Plant Shape	9303	Seed Coat Luster	9303
Leaf Shape	9303	Seed Size	9303
Leaf Color	9303	Seed Shape	9303
Leaf Size	9303	Seedling Pigmentation	9303

23. GIVE DATA FOR SUBMITTED AND SIMILAR STANDARD VARIETY: Paired Comparison Data

9600059

VARIETY	NO. OF DAYS MATURITY	PLANT LODGING SCORE	CM PLANT HEIGHT	LEAFLET SIZE		SEED CONTENT		SEED SIZE G/100 SEEDS	NO. SEEDS/ POD
				CM Width	CM Length	% Protein	% Oil		
9305 Submitted	131.4	1.7	83.3	5.4	10.2	42.8	20.8	17.5	3
9303 Name of Similar Variety	132.1	1.7	85.0	5.8	10.3	42.9	21.0	17.5	3

PUBLICATIONS USEFUL AS REFERENCE AIDS FOR COMPLETING THIS FORM:

1. Caldwell, B.E., ed. 1973. Soybeans: Improvement, Production, and Uses. Amer. Soc. Agron. Monograph No. 16.
2. Buttery, B.R. and R.I. Buzzell. 1968. Peroxidase activity in seeds of soybean varieties. Crop Sci., 8: 722-725.
3. Hymowitz, T. 1973. Electrophoretic analysis of SBTI-A_2 in the USDA soybean germplasm collection. Crop Sci., 13: 420-421.
4. Payne, R.C. and L.F. Morris. 1976. Differentiation of soybean cultivars by seedling pigmentation patterns. J. Seed Technol. 1: 19.

8

9200026

Exhibit D: Additional Description of Variety

In Exhibit C we have identified 9305 as susceptible to bacterial blight, brown spot, pod and stem blight, rhizoctonia root rot, bud blight, yellow mosaic, cowpea mosaic, pod mottle and seed mottle. This does not mean that we consider 9305 to be worse than other varieties of similar maturity in reaction to these challenges. Rather, we have chosen to be conservative and have identified 9305 as "susceptible".

Variety 9305 is an early group III variety. If group III maturities are divided into tenths, the relative maturity of 9305 is 3.0.

Exhibit E: Statement of the Basis of Applicants Ownership

Variety 9305 was originated and developed by plant breeders (U.S. nationals) from whom, by agreement, Pioneer Hi-Bred Int'l, Inc. has obtained exclusive rights to 9305. No rights to 9305 are retained by the plant breeder or any other party.